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Introduction to the Journal of Man.

AS the JOURNAL OF MAN is designed to occupy the highest realm of knowledge attainable by man, it cannot be a magazine for the millions who have no aspiration toward such knowledge. Its pages will not be devoted to the elementary lessons that such persons need to attract them to the science of the soul and the brain, and the philosophy of reform. They must be given to the illustration of science that is essentially new, which would be instructive to those who already have some elementary knowledge of the subject. That knowledge which readers of the Journal will be presumed to have is briefly presented in the following sketch of

THE SCIENCE OF ANTHROPOLOGY.

1. The brain is the seat of conscious life, the organ of all the powers of the soul, the controlling organ of the body in all its functions, and is therefore a psycho-physiological apparatus, psychic in its relation to the soul, physiological in its relation to the body.

2. The anatomy of the brain, which is wonderfully complex, was first rationally explored and understood by Dr. Gall, the greatest philosopher of the eighteenth century. The first and only successful investigation of its psychic functions was also made by him, and his doctrines were for many years admired by the ablest scientists of Europe, but after his death fell into unmerited neglect, for three sufficient reasons: First, his method of investigation by studying comparative development was entirely neglected. Phrenology decayed when the fountain of the science was thus closed, as geology would have declined under similar treatment. But no student of comparative development has ever repudiated the discoveries of Gall. It was unfortunate that Gall and Spurzheim did not give lessons in craniology. Secondly, the intense materialism of the scientific class has made them profoundly averse to all investigation of a psychic nature and to all profound philosophy. Thirdly, the inaccuracies of Gall's incomplete discoveries, especially in reference to the cerebellum, furnished some valid objections to his opponents, who paid no attention to his evidences, but condemned without investigation.

3. The cranial investigations of Dr. Buchanan, from 1835 to 1841, confirmed nearly all the discoveries of Gall, and corrected their inaccuracies as to anatomical location and psychic definition. He also discovered the locations of the external senses, and found the science thus corrected entirely reliable in the study of character. In these results he had the substantial concurrence of Dr. W. Byrd Powell, a gentleman of brilliant talents, the only efficient American cultivator of the science.

4. In 1841, Dr. Buchanan (having previously discovered the organ of sensibility) investigated the phenomena of sensitive constitutions, and found that they were easily affected by contact with any substance, and especially by contact with the human hand, so that the organic action of the brain was modified by the nervura from the fingers, and every convulsion could be made to manifest its functions, whether psychic or physiological, and whether intellectual, emotional, volitional, or passionate, so as to make the subject of experiment amiable, irritable, intellectual, stupid, drowsy, hungry, restless, entranced, timid, courageous, sensitive, hardy, morbid, insane, idiotic, or whatever might be elicited from any region of the brain, and also to control the physiological functions, modifying the strength, sensibility, temperature, circulation, and pulse.

5. These experiments have been continually repeated from 1841 to 1887, and have commanded unanimous assent to their truth from many committees of investigation, and have during sixteen years been regularly presented and accepted in medical colleges; hence it is not improper to treat this demonstrated science of the brain as an established science, since the establishment of science depends not upon the opinions of the ignorant, but upon the unanimous assent of its investigators or students.

6. As the brain contains all the elements of humanity, their revelation constitutes a complete ANTHROPOLOGY, the first that has ever been presented, and this science necessarily has its physiological, psychic or social, and supernal or spiritual departments. In its physiological department it constitutes a vast addition to the medical sciences, and essentially changes all the philosophy of medical science, while it initiates many fundamental changes in practice, which have been adopted by Dr. Buchanan's pupils. Hence it deserves the profound attention of *all medical schools*.

7. In its psychic or social relations, anthropology enables us to form correct estimates from development of all vertebrate animals, of persons and of nations, showing their merits and deficiencies, and consequently the EDUCATION or legislation that is needed. By showing the laws of correlation between persons, it establishes the scientific principles of SOCIAL SCIENCE, and the possibilities of human society. By explaining all the elements of character and their operation, it establishes the true MORAL PHILOSOPHY. By giving the laws of development it formulates the true EDUCATION, and by giving the laws of expression it establishes the science of ORATORY and the PHILOSOPHY OF ART, making a more complete and scientific expression of what was empirically observed by Descartes with remarkable success.

8. In its spiritual department, anthropology shows the relation of human life to the divine, of terrestrial to supernal existence, and the laws of their intercourse; hence establishing scientific religion and destroying superstition. It gives the scientific principles of animal magnetism, spiritualism, trance, dreaming, insanity, and all extraordinary conditions of human nature.

9. In the department of SARCOGNOMY, anthropology fully explains the triune constitution of man, the relations of soul, brain, and body, thus modifying medical and psychic philosophy, and establishing a new system of external therapeutics for electric and nervauric practice, which have been heretofore superficially empirical. It also gives us

new views of animal development and an entirely new conception of statuesque conformation and expression.

10. The magnitude and complexity of the new science thus introduced give an air of romance and incredibility to the whole subject, for *nothing so comprehensive has ever before been scientifically attempted*, and its magnitude is repulsive to conservative minds, to those who tolerate only slow advances; but the marvellous character of anthropology has not prevented its acceptance by all before whom it has been distinctly and fully presented, for the singular ease and facility of the demonstration is almost as marvellous as the all-embracing character of the science, and the revolutionary effects of its adoption upon every sphere of human life. This marvellous character is most extraordinary in its department of PSYCHOMETRY, which teaches the existence of divine elements in man, powers which may be developed in millions, by means of which mankind may hold the key to all knowledge, to the knowledge of the individual characters of persons in any locality or any age, of the history of nations and the geological history of the globe, the characters of all animals, the properties of all substances, the nature of all diseases and mental conditions, the mysteries of physiology, the hidden truths of astronomy, and the hidden truths of the spirit world. Marvellous as it is, psychometry is one of the most demonstrable of sciences, and the evidence of its truth is fully presented in the "Manual of Psychometry," while the statement and illustration of the doctrines of anthropology were presented in the "System of Anthropology," published in 1854, and will be again presented in the forthcoming work, "Cerebral Psychology," which will show how the doctrines of anthropology are corroborated by the labors of a score of the most eminent physiologists and vivisection anatomists of the present time.

If but one tenth part of the foregoing cautious and exact statements were true in reference to anthropology, its claims upon the attention of all clear, honest thinkers, and all philanthropists, would be stronger than those of any doctrine, science, or philanthropy now under investigation; and as those claims are well-endorse and have ever challenged investigation, their consideration is an imperative duty for all who recognize moral and religious responsibility, and do not confess themselves helplessly enthralled by habit and prejudice. Collegiate faculties may do themselves honor by following the example of the Indiana State University in investigating and honoring this science before the public, and thoughtful scholars may do themselves honor by following the examples of Denton, Pierpont, Caldwell, Gatchell, Forry, and Robert Dale Owen.

The discoverer has ever been ready to co-operate with honorable inquirers, and has satisfied all who have met him as seekers of truth; a fact which justifies the tone of confidence with which he speaks. The only serious obstacles he has ever encountered have been the mental inertia which shuns investigation, the cunning cowardice which avoids new and not yet popular truths, and the moral torpor which is indifferent to the claims of truth and duty when not enforced by public opinion. When standing at the head of the leading medical college of Cincinnati, he taught, demonstrated, and proclaimed, during ten years, with collegiate sanction, for the medical profession, the doctrines which he now brings before the American people by scientific volumes (the "Manual of Psychometry," "Therapeutic Sarcognomy," and the "New Education"), and by the JOURNAL OF MAN, which, being devoted chiefly to the introduction of anthropology as the most effective form of philanthropy, may justly claim the active co-operation of the wise and good in promoting its circulation as the herald of the grandest reforms that have ever been proposed in the name and by the authority of positive science.

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The World's Neglected or Forgotten Leaders and Pioneers.

LEIF ERICSON, the long-forgotten Scandinavian discoverer of North America, nearly five hundred years before Columbus, has at last received American justice, and a statue in his honor has been erected, which was unveiled in Boston, on Commonwealth Avenue, before a distinguished assemblage, on the 29th of October.

The history of the Scandinavian discovery and settlement was related on this occasion by Prof. E. Horsford, from whose address the following passages are extracted:

"What is the great fact that is sustained by such an array of authority? It is this: that somewhere to the southwest of Greenland, at least a fortnight's sail, there were, for 300 years after the beginning of the 11th century, Norse colonies on the coast of America, with which colonies the home country maintained commercial intercourse. The country to which the merchant vessels sailed was Vinland.

"The fact next in importance that this history establishes is, that the first of the Northmen to set foot on the shores of Vinland was Leif Ericson. The story is a simple one, and most happily told by Prof. Mitchell, who for forty years was connected with the coast survey of the United States in the latitudes which include the region between Hatteras and Cape Ann. Leif, says Prof. Mitchell, never passed to the south of the peninsula of Cape Cod. He was succeeded by Thorwald, Leif's brother. He came in Leif's ship in 1002 to Leif's headquarters in Massachusetts Bay and passed the winter. In the spring, he manned his ship and sailed eastward from Leif's house, and, unluckily running against a neck of land, broke the stem of the ship. He grounded the ship in high water at a place where the tide receded with the ebb to a great distance, and permitted the men to careen her in the intervals of the tide, to repair her. When she was ready to sail again, the old stem or nose of the ship was set up in the sand. Thorwald remained a couple of years in the neighboring bay, examining sandy shores and islands, but not going around the point on or near which he had set up his ship's nose. In a battle with the Indians he was wounded and died, and was buried in Vinland, and his crew returned to Greenland. A few years later, Thorfinn and his wife, Gudrid, set out with a fleet of three ships and 160 persons, of whom seven were women, to go to Vinland, and in two days' sail beyond Markland they came to the

ship's nose set upon the shore, and, keeping that upon the starboard, they sailed along a sandy shore, which they called Wunderstrandir, and also Funderstrandir. One of the captains, evidently satisfied that they were not in the region visited by Leif and Thorwald, turned his vessel to the north to find Vinland. Thorfinn and Gudrid went further south and trafficked, and gathered great wealth of furs and woods, and then returned to Greenland and Norway."

Prof. Horsford refers next to various geographic names on the New England coast which are of Scandinavian origin.

"What do all these names mean? They are certainly not Algonquin or Iroquois names. They are not names bestowed by the Plymouth or Massachusetts Bay colonies. Of most of them is there any conceivable source other than the memories lingering among a people whose ancestors were familiar with them? Are they, for the most part, relics of names imposed by Northmen once residing here?

"I have told you something of the evidence that Leif Ericson was the first European to tread the great land southwest of Greenland. His ancestry was of the early Pilgrims, or Puritans, who, to escape oppression, emigrated, 50,000 of them in sixty years, from Norway to Iceland, as the early Pilgrims came to Plymouth. They established and maintained a republican form of government, which exists to this day, with nominal sovereignty in the King of Denmark, and the flag, like our own, bears an eagle in its fold. Toward the close of the 10th century a colony, of whom Leif's father and family were members, went out from Iceland to Greenland. In about 999, Leif, a lad at the time of his father's immigration, went to Norway, and King Olaf, impressed with his grand elements of character, gave him a commission to carry the Christianity to which he had become a convert to Greenland. He set out at once, and, with his soul on fire with the grandeur of his message, within a year accomplished the conversion and baptism of the whole colony, including his father.

"To Leif a monument has been erected. In thus fulfilling the duty we owe to the first European navigator who trod our shores, we do no injustice to the mighty achievement of the Genoese discoverer under the flags of Ferdinand and Isabella, who, inspired by the idea of the rotundity of the earth, and with the certainty of reaching Asia by sailing westward sufficiently long, set out on a new and entirely distinct enterprise, having a daring and a conception and an intellectual train of research and deduction as its foundation quite his own. How welcome to Boston will be the proposition to set up in 1892, a fit statue to Columbus.

"We unveil to-day the statue in which Anne Whitney has expressed so vividly her conception of this leader, who, almost nine centuries ago, first trod our shores."

The statue, however, is purely fanciful, and gives no idea either of the personal appearance or costume of the great sailor, who has waited for this justice to his memory much longer than Bruno and many other heroes of human progress.

Columbus may have been original in his ideas, but it was the Northmen who led in exploration. It was they who changed the old flat-bottomed ships of the Roman Empire to the deep keels which made the exploration of the Atlantic ocean possible.

This act of justice has been prompted by the appreciative sentiments of the late Ole Bull, and the efforts of Miss Marie Brown, who has lectured on the subject. Miss Brown says that Columbus learned of the discovery of America at Rome, and also at Iceland, which he visited in 1477. Indeed, Columbus was not seeking the America of the Norsemen, but was sailing to find the Indies.

But now that historic justice is done, we realize that as Bryant expressed it of Truth, "the eternal years of God are her's," and she needs a good many centuries to recover her stolen sceptre. The triumph of truth follows battles in which there are many defeats that seem almost fatal. What is the loss of five centuries in geographic truth to the loss of a thousand years in astronomic science? It was for more than a thousand years that the heliocentric theory of the universe, developed by the genius of PYTHAGORAS, was ignored, denied, and forgotten, until the honest scholar, COPERNICUS, revived it by a mathematical demonstration, which he did not live long enough to see trampled on; for the great astronomer that next appeared, Tycho Brahe, denied it, and the Catholic Church attempted to suppress it in the person of Galileo, who is said to have been forced by imprisonment and torture to succumb to authority (the torture may not be positively known, but is believed with good reason). Even Luther joined in the theological warfare against science, saying, "I am now advised that a new astrologer is risen, who presumeth to prove that the earth moveth and goeth about, not the firmament, the sun and moon — not the stars — like as when one sitteth on a coach, or in a ship that is moved, thinketh he sitteth still and resteth, but the earth and trees do move and run themselves. Thus it goeth; we give ourselves up to our own foolish fancies and conceits. This fool (Copernicus) will turn the whole art of astronomy upside down; but the Scripture showeth and teacheth another lesson, when Joshua commandeth the sun to stand still, and not the earth."

The attitude of Luther in this matter was the attitude of the Church generally, in opposition to science, for it assumed its position in an age of dense ignorance, and claimed too much infallibility to admit of enlightenment. Nevertheless, the Church feels the spirit of the age and slowly moves. At the present time it is being *slowly* permeated by the modern spirit of agnostic scepticism, which is another form of ignorance.

Mankind generally occupy the intrenched camp of ignorance within which they know all its walls embrace; outside of which they look upon all that exists with feelings of suspicion and hostility, and alas, this is as true of the educated as of the uneducated classes. It was the French Academy that laughed at Harvey's discovery and at Fulton's plan of propelling steamboats, and even at Arago's suggestion of the electric telegraph, as the Royal Society laughed at

Franklin's proposed lightning rods. It was Bonaparte who treated both Fulton and Dr. Gall with contempt. It was the medical Faculty that arrayed itself against the introduction of Peruvian bark, which they have since made their hobby; and it was the same Edinburgh Review which poured its ridicule upon Gall, that advised the public to put Thomas Gray in a straight-jacket for advocating the introduction of railroads. Equally great was the stupidity of the French. The first railroad was constructed in France fifty years ago. Emil Periere had to make the line at his own expense, and it took three years to obtain the consent of the authorities. Their leading statesman, Thiers, contended that railroads could be nothing more than toys. We remember that a committee of the New York Legislature was equally stupid, and endeavored to prove in their report that railways were entirely impracticable. English opposition was still more stupidly absurd. Both Lords and Commons in Parliament were entirely opposed. "The engineers and surveyors as they went about their work were molested by mobs. George Stephenson was ridiculed and denounced as a maniac, and all those who supported him as lunatics and fools." "George Stephenson although bantered and wearied on all sides stood steadfastly by his project, in spite of the declarations that the smoke from the engine would kill the birds and destroy the cattle along the route, that the fields would be ruined, and people be driven mad by noise and excitement."

Nothing is better established in history than the hostility of colleges and the professional classes to all great innovations. "Truly (says Dr. Stille in his *Materia Medica*) nearly every medicine has become a popular remedy before being adopted or even tried by physicians," and the famous author Dr. Pereira declares that "nux vomica is one of the few remedies the discovery of which is not the effect of mere chance."

The spirit of bigotry, in former times, jealously watched every innovation. Telescopes and microscopes were denounced as atheistic, winnowing machines were denounced in Scotland as impious, and even forks when first introduced were denounced by preachers as 'an insult on Providence not to eat our meat with our fingers.'

It is not strange that the last fifty years have sufficed to cover with a cloud of collegiate ignorance and bigotry the discoveries of the illustrious Gall, for whom I am doing a similar service, to that of Copernicus for Pythagoras.

This is nothing unusual in the progress of Science. There was no brighter genius in physical science at the beginning of this century than Dr. Thomas Young, who died in 1829, whose discoveries fell into obscurity until they were revived by more recent investigation. He had that intuitive genius which is most rare among scientists.

He was a great thinker and discoverer, who knew how to utilize in philosophy discovered facts, and was not busy like many modern scientists in the monotonous repetition of experiments which had already been performed.

"At no period of his life was he fond of repeating experiments or even of originating new ones. He considered that however

necessary to the advancement of science, they demanded a great sacrifice of time, and that when a fact was once established, time was better employed in considering the purposes to which it might be applied, or the principles which it might tend to elucidate."

He says, in his Bakerian lecture, "Nor is it absolutely necessary in this instance to produce a single new experiment; for of experiments there is already an ample store."

In a letter to his sister-in-law, Mrs. Earle, he says, "Acute suggestion was then, and indeed always, more in the line of my ambition than experimental illustration," and on another occasion, referring to the Wollaston fund for experimental inquiries, he said, "For my part, it is my pride and pleasure, as far as I am able, to supersede the necessity of experiments, and more especially of expensive ones." The famous Prof. Helmholtz said of Young:

"The theory of colors with all their marvellous and complicated relations, was a riddle which Göethe in vain attempted to solve, nor were we physicists and physiologists more successful. I include myself in the number, for I long toiled at the task without getting any nearer my object, until I at last discovered that a wonderfully simple solution had been discovered at the beginning of this century, and had been in print ever since for any one to read who chose. This solution was found and published by the same Thomas Young, who first showed the right method of arriving at the interpretation of Egyptian hieroglyphics."

"He was one of the most acute men who ever lived, but had the misfortune to be *too far in advance of his contemporaries*. They looked on him with astonishment, but could not follow his bold speculations, and thus a mass of his most important thoughts remained buried and forgotten in the 'Transactions of the Royal Society,' until a later generation by slow degrees arrived at the re-discovery of his discoveries, and came to appreciate the force of his argument and the accuracy of his conclusions."

This half century of passive resistance to science, in the case of Dr. Young and Dr. Gall, is nothing unusual. It was 286 years from the day when Bruno, the eloquent philosopher, was burned at the stake by the Catholic Church, before a statue was prepared to honor his memory in Italy.

What was the reception of the illustrious surgeon, physiologist, and physician, John Hunter? While he lived, "most of his contemporaries looked upon him as little better than an enthusiast and an innovator," according to his biographer; and when, in 1859, it was decided to inter his remains in Westminster Abbey, it was hard to find his body, which was at last discovered in a vault along with 2000 others piled upon it.

Harvey's discoveries were generally ignored during his life, and Meibomius of Lubeck rejected his discovery in a book published after Harvey's death.

When Newton's investigations of light and colors were first published, "A host of enemies appeared (says Playfair), each eager to obtain the unfortunate pre-eminence of being the first to attack con-

clusions which the unanimous voice of posterity was to confirm." Some, like Mariotte, professed to repeat his experiments, and succeeded in making a failure, which was published; like certain professors who at different times have undertaken to make unsuccessful experiments in mesmerism and spiritualism, and have always succeeded in making the failure they desired.

Voltaire remarks, and Playfair confirms it as a fact, "that though the author of the *Principia* survived the publication of that great work nearly forty years, he had not at the time of his death, twenty followers out of England."

If educated bigotry could thus resist the mathematical demonstrations of Newton, and the physical demonstrations of Harvey, has human nature sufficiently advanced to induce us to expect much better results from the colleges of to-day—from Harvard, Yale, Princeton, and the rest? If such a change has occurred, I have not discovered it.

Neglect and opposition has ever been the lot of the original explorer of nature. Kepler, the greatest astronomical genius of his time, continually struggled with poverty, and earned a scanty subsistence by casting astrological nativities.

Eustachius, who in the 16th century discovered the Eustachian tube and the valves of the heart, was about 200 years in advance of his time, but was unable, from poverty, to publish his anatomical tables, which were published by Lancisi 140 years later, in 1714.

Not only in science do we find this stolid indifference or active hostility to new ideas, but in matters of the simplest character and most obvious utility. For example, this country is now enjoying the benefits of fish culture, but why did we not enjoy it a hundred years ago? The process was discovered by the Count De Goldstein in the last century, and was published by the Academy of Sciences, and also fully illustrated by a German named Jacobi, who applied it to breeding trout and salmon. This seems to have been forgotten until in 1842 two obscure and illiterate fishermen rediscovered and practised this process. The French government was attracted by the success of these fisherman, Gehin and Remy, and thus the lost art was revived.

Even so simple an invention as the percussion cap, invented in 1807, was not introduced in the British army until after the lapse of thirty years.

The founder of the kindergarten system, Friedrich FROEBEL, is one of the benefactors of humanity. How narrowly did he escape from total failure and oblivion.

The "Reminiscences of Frederick Froebel," translated from the German of the late Mrs. Mary Mann, gives an interesting account of his life and labors, upon which the following notice is based:

"Froebel died in 1852, and it is possible that his system of education would have died with him—to be resurrected and reapplied by somebody else centuries later—only for a friend and interpreter who remained to give his teachings to the world. This friend, disciple, and interpreter was Madame Von Marenholz. His system

of education had this peculiarity which made it different from any other plan of teaching ever given to the world — it was first grasped in its full significance by women. They, sooner than men, saw its truth to nature, and its grand, far-reaching meaning, and became at once its enthusiastic disciples. But the German women are in a bondage almost unknown to their sisters of the other civilized races, therefore Froebel's reform progressed only slowly. Had his principles been given to the world in the midst of American or English women, they would most likely have been popularly known and adopted long ago.

"Froebel did not see any very magnificent practical results flow from the "new education" in his time. While he lived the ungrateful tribe of humanity abused, misrepresented, and laughed him to scorn, as it has done everybody who ever conferred any great and lasting benefit on it. A touching illustration of this is given in the anecdote narrating Frau Von Marenholz's first meeting with the founder of kindergartens. The anecdote begins the book, and it is the key-note of the sorrowful undertone throughout.

"In 1849 Frau Von Marenholz went to the baths of Liebenstein. She happened to ask her landlady what was going on in the place, and in answer the landlady said that a few weeks before a man had settled down near the springs who danced and played with the village children, and was called by people "the old fool." A few days afterwards Madame Von M. was walking out, and met "the old fool." He was an old man, with long gray hair, who was marching a troop of village children two and two up a hill. He was teaching them a play, and was singing with them a song belonging to it. There was something about the gray-haired old man, as he played with the children, which brought tears into the eyes of both Madame Von M. and her companion. She watched him awhile, and said to her companion :

" "This man is called 'old fool' by these people. Perhaps he is one of those men who are ridiculed or stoned by contemporaries, and to whom future generations build monuments."

"I knew," says Madame Von M., "that I had to do with a true man — with an original and unfalsified nature. When one of his pupils called him Mr. Froebel, I remembered having once heard of a man of that name who wished to educate children by play, and that it had seemed to me a very perverted view, for I had only thought of empty play, without any serious purpose."

"Froebel met with violent opposition and ridicule all his life, and just when at last he thought he had successfully planted his ideas, there came a sudden death-blow to his hopes, which was also a death-blow to the good and great man. The Prussian Government was and is as tyrannical as William the Conqueror, who made the English people put their lights out at dark, and suddenly, in August, 1851, the Prussian Government immortalized itself by passing a decree forbidding the establishment of any kindergartens within the Prussian dominions. In unguarded moments, Froebel had used the expression "education for freedom," in referring to his beloved plans,

and that was enough for Prussia, in the ferment of fear in which she has been ever since 1848. Kindergartens in Germany have not yet recovered from this blow, and Froebel himself sunk under it and died. But a little time before he died, he said: "If 300 years after my death, my method of education shall be completely established according to its idea, I shall rejoice in heaven."

"Froebel's life was full of strange vicissitudes and disappointments. The few friends who understood him, and the children whom he taught, and who, perhaps, understood him better than anybody else, revered him, and loved him as father, prophet, and teacher.

"On his seventieth birthday, two months before his death, his beloved pupils gave him a festival, which is beautiful to read about. It must have gladdened the pure-hearted old man immeasurably. Froebel was wakened at sun-rise by the festal song of the children, and as he stepped out of his chamber to the lecture-room, he saw that it had been splendidly adorned with flowers, festoons, and wreaths of all kinds. The day was celebrated with songs and rejoicing, and gifts were received from pupils and friends in various parts of the world, and in the evening, after a song, a pupil placed a green wreath upon the master's head.

"Two months after this he died peacefully. One of his strongest peculiarities was his passionate love for flowers, and during his illness he repeatedly commended the care of his flowers to his friends. He had the window opened frequently, so he could gaze once more on the out-door scenes he loved so well. Almost his last words were: 'Nature, pure, vigorous Nature!'"

JOHN FITCH, the inventor of steamboats, was even less fortunate than Froebel. No patron took him by the hand, and although his invention was successfully demonstrated at Philadelphia in 1787, by a small steamboat, the trial being witnessed by the members of the convention that formed the Federal constitution, he could not obtain sufficient co-operation to introduce the invention, and finally left his boat to rot on the shores of the Hudson and returned to his home at Bardstown, Ky., where he died in 1798. The unsuccessful struggles of Fitch make a melancholy history. In his last appeal he used this language: "But why those earnest solicitations to disturb my nightly repose, and fill me with the most excruciating anxieties; and why not act the part for myself, and retire under the shady elms on the fair banks of the Ohio, and eat my coarse but sweet bread of industry and content, and when I have done, to have my body laid in the soft, warm, and loamy soil of the banks, with my name inscribed on a neighboring poplar, that future generations when traversing the mighty waters of the West, *in the manner that I have pointed out*, may find my grassy turf."

In the lives of Pythagoras, Copernicus, Galileo, Ericson, Bruno, Harvey, Kepler, Newton, Hunter, Gall, Young, Froebel, Gray, Fitch, Stephenson, and *many others*, we learn that he who assails the Gibraltar of conservative and authoritative ignorance must expect to conduct a very long siege, to maintain a resolute battle, and perhaps to die in his camp, leaving to his posterity to receive the predestined

surrender of the citadels of Falsehood and Darkness, for the eternal law of the universe declares that all darkness shall disappear, and Light and Peace shall cover the earth, as they already fill the souls of the lovers of wisdom.

Social Conditions.

UNDERGRADUATE EXPENSES AT HARVARD. — A physician has written me to know what the annual expense is for an undergraduate at Harvard College. The inquiry is made that he (the querist) may know somewhere near what it will cost to send his son to that institution. Thinking that others of the *Journal's* readers might like to know what a literary (or liberal) education costs at a first-class college, I have looked up the present cost, and by comparing it with my own, thirty-five years ago, I find that expense has increased from year to year, until now it requires about \$550 to \$600 annually to cover tuition, room-rent, board, and common running expenses. A boy might squeeze through for \$400 a year, but he would have to pinch and be niggardly, if not mean. The \$550 or \$600 would not cover vacation expenses and society dues, therefore the larger sum ought to be reckoned as the cost annually for a Harvard undergraduate at the present time. And upon inquiry, I find that about the same amount of money is required by an undergraduate of Yale. Board in New Haven is the same in price as in Cambridge. For the four years' course, then, there should be provision for \$2,500. Rich students spend a \$1000 or more each year, but they do not embrace ten per cent. of the classes. The average student when I was in Harvard expended \$350 to \$400 a year — a cost which did not cover vacation expenses and society matters. I will venture the remark that as high an order of scholarship can be obtained at "Western" colleges as in Harvard or Yale; and that the expense of student life would not be two-thirds as much. Why, then, take the extravagant course? The *name* and *fame* of an institution count for something. A recently founded college may not live long; it has to be tested by time before *prestige* can be attained. Universities have to be endowed before they can command the best talent of the world in teachers. The fees obtained from students will not pay the expenses of a first-class literary institution.

Lastly, an education of a high order does not insure success in life, but, other things being equal, the man of learning has the best chance to win in the race we are running.—*Eclectic Medical Journal*

EUROPEAN WAGES.—Senator Frye said in a public address in Boston: "I say from all my observations made there, and they were made as carefully as I could make them, and in all honesty of purpose, there is only one country in Europe that comes within half of our wages, and that is England, and the rest are not one-third, and some not within one-quarter, of our wages."

INDIA AS A WHEAT PRODUCER.—"Consul-General Bonham says she is a dangerous competitor of the United States. The report of Consul-General Bonham at Calcutta, British India, treats at length

of the wheat interests of that country. The area devoted to wheat in 1886 was about 27,500,000 acres, and the total yield 289,000,000 bushels. As compared with the wheat of the Pacific coast, the Indian wheat is inferior, but when exported to Europe it is mixed and ground with wheat of a superior quality, by which process a fair marketable grade of flour is obtained. The method of cultivating the soil is in the main the same as it was centuries ago, and there seems to be great difficulty in inducing the farmer to invest in modern agricultural implements, and yet, with all the simple and primitive methods, the Indian farmers can, in the opinion of the Consul-General, successfully compete with those of the United States in the production of wheat. This is due to the fact that the Indian farmer's outfit represents a capital of not more than \$40 or \$50, and his hired help works, feeds, and clothes himself on about \$2.50 a month. The export of wheat from British India has increased from 300,000 cwt. in 1868, to 21,000,000 cwt. in 1886, and the increase of 1886 over 1885 amounts to about 5,000,000 cwt.

"The Consul-General says that some of his predecessors have claimed that the United States has nothing to fear from India as a competitor in the production of wheat. In this view he does not concur, and believes that to-day India is second only to the United States in wheat-growing. Furthermore, wheat-growing in India is yet in its infancy, and its further development depends principally upon the means of transportation to the sea-board. He fears that with the cheap native labor of India and the constantly growing facilities for transportation, the United States will find her a formidable competitor as a producer of wheat."

INCREASE OF INSANITY.—I have repeatedly referred to the increase of insanity and crime under our heartless system of education. It is illustrated by every collection of statistics. The increase between 1872 and 1885 was, in Maine, with five per cent. increase in population, in ten years, 23 per cent. increase in insanity. In New Hampshire, 13 per cent. in population, 55 in insanity. In these two States insanity increases four times as fast as population. In Massachusetts, population 33 per cent., insanity 91 per cent. In Rhode Island, population 40 per cent., insanity 94 per cent. In Connecticut, population 23 per cent., insanity 194 per cent. The total number of insane in New England has increased from 4,033, in 1872, to 7,232, in 1885,—an increase of 3,199 in 13 years. Such are the estimates prepared from official reports by E. P. Augur, of Middletown, Conn. Is it possible by the repetition of such statements as these to rouse the torpid conscience of the leaders of public opinion to the necessity of a NEW EDUCATION?

TEMPERANCE.—According to the National Bureau of Statistics, the annual consumption of liquors per capita in the United States, from 1840 to 1886, shows a reduction in the consumption of distilled spirits to less than one-half of the average between 1840 and 1870. The most marked decrease was between 1870 and 1872. The consumption of wine has averaged, from 1840 to 1870, about one-eighth

as much — since 1870, from 30 to 40 per cent. as much, but the consumption of malt liquors, which in 1840 and 1850 was little over half that of spirits, has rapidly risen until, in 1886, it was nine times as great, the number of gallons per capita being of spirits, 1.24; wines, 0.38; malt liquors, 11.18. The total consumption of liquors of all sorts has risen from 4.17 gallons per capita in 1840, to 12.62 in 1886. The consumption of malt liquors per capita has increased fifty per cent. in the last seven years.

The tax collected on whiskey for 1886–87 was \$3,262,945 less than for the previous year, and the tax on beer was \$2,245,456 more than for the previous year.

“Chevalier Max Proskowetz de Proskow Marstorn states that in Austria inebriety is increasing everywhere on a dangerous scale. The consumption of alcohol (taken as at 10 per cent.) was 6.7 litres a head in a population of 39,000,000; but in some districts 15½ litres was the average (4½ litres go to a gallon). In all Austro-Hungary there was an increase of nearly 4,000,000 florins in the cost of alcohol in 1884–85 over 1883–84. In 1885 there were 195,665 different places (stations, gin-shops, and subordinate retails) where liquors were sold. In districts where the most spirits are used there were fewer fit recruits.”

FLAMBOYANT ANIMALISM. — In Boston, which sometimes calls itself our American Athens, the highest truths of psychic science are daily neglected by the more influential classes, while races, games, and pugilism occupy the largest space in the daily papers, and a leading daily boasts of its more perfect descriptive and statistical record of all base-ballism as a strong claim to public support.

The pugilist Sullivan is the hero of Boston; he received a splendid ovation in the Boston Theatre, with the mayor and other dignitaries to honor him, and a belt covered with gold and diamonds, worth \$8,000, was presented, besides a large cash benefit. His departure for England was honored like that of a prince by accompanying boats, booming cannon, and tooting whistles, and he is said to swing a \$2000 cane presented by his admirers. How far have we risen in eighteen centuries above the barbarism of Rome? There is no heathen country to-day that worships pugilism. Perhaps when the saloon is abolished, we may take another step forward in civilization. London has rivalled Boston, giving Sullivan a popular reception by crowds which blocked up the principal streets.

Transcendental Hash.

The *Winsted (Conn.) Press* published an article on Buddhism in America which is interesting as a specimen of the rosy-tinted fog of some intellectual atmospheres, and the singular jumble of crude thought in this country. As an intellectual hash it may interest the curious. The following is the article:

BUDDHISM IN AMERICA.

While sectarian Christianity is, at great expense, with much ado, making a few hundred converts in Asia among the ignorant, Bud-

dhism is spreading rapidly in the United States, and is reaching our most intelligent people, without any propaganda of missionaries or force. There are already thousands of Buddhists in this country, and their number is augmenting more rapidly perhaps than that of any other faith, but of these probably comparatively few know that they are following the Buddhistic lines of thought and have adopted the principles of Buddhistic faith. Theosophy, mental science (sometimes called "Christian science"), esoteric Christianity and Buddhistic metaphysics are, we believe, substantially one and the same thing, and we may also include their intimate relative, known here as Modern Spiritualism, the difference between them being no greater than that which invariably arises from different interpretations of the same idea by different individuals under differing environment. To compare these differences with the differences of the Protestant sects would be exalting the sects, for sectarian Christianity is hardly worthy of association with the exalted teachings of Buddha, the theosophists, and the finer conceptions of our modern metaphysicians and Spiritualists, yet we make the comparison for the sake of illustration.

Counting the philosophical modern Spiritualists we may say that the number of people in this country who, without knowing it, perhaps, are reasoning themselves into acceptance of Buddhistic teachings, may be placed in the hundreds of thousands. A modified, spiritualized, and improved form of Buddhism is, we suppose, likely to unite the liberalized minds of this country (normal Christians and Infidels alike) into a common and highly intellectual and spiritual faith, opposed to which will be the less advanced people under the leadership of the Roman Catholic church, representing the temporal power of Christian priestcraft and the mythological superstitions which have attached themselves to the precepts and teachings of the Christ man of 1800 years ago.

Certainly no intelligent observer can look out upon the tremendous upheaval of religious thought which is now taking place in this country, without seeing that a new era has dawned in the spiritual life of the American people and foreseeing a readjustment of religious lines on a more elevated, less dogmatic and less antagonistic plane. We have been passing through the very same experiences that preceded a downfall of the polytheistic mythology, followed by the new era of Christian mythology in one part of the world and Buddhistic mythology in another. Jesus and Buddha both came to deliver exalted teachings which would lift the world out of bondage to an older faith and its more cruel superstitions and the corruptions of priestcraft and gross ceremonials; both were reformers of substantially the same abuses; both suffered for humanity, both lived humble and inspired lives, both were interpreters of the same truths to different peoples, both were good men, and both have come down to us with their greatness exaggerated by their followers beyond anything they claimed for themselves, while the personal existence of each is shrouded in the same mystery and covered with the same doubt. That these two men did exist as men we may well believe, but that as personages they were incarnated on earth is a matter of small

importance compared with the consequences which have followed their supposed embodiment.

The decline of faith in the old theology and the silent acceptance of new ideas by the church people of America, the rapid spread of infidelity and aggressive agnosticism, and the hold which Modern Spiritualism under various disguises now has upon the people, premise tremendous changes, and indicate a new era of spiritual thought—an era of better and sweeter life for mankind we trust.

Men and women who think alike will act together when prejudices born of old names, partisan rivalries and personal animosities are outgrown. A new philosophy with a new name, made up of the old truths with new refinements and elaborations, will unite the liberal-minded in a fraternity of thought based on a better understanding of spiritual truths, and clearer comprehension of the importance to humanity, of liberty, justice and love.

This new religion, if we mistake not the signs of the times, will or does partake largely of theosophic and Buddhistic metaphysics and is not, therefore, to be despised by our best thinkers. Buddhism corrupted by Brahmic theocracy—as Christianity by Mosaic rites, by papistic theology and sectarian piety—has come to us as a morbid asceticism or worse, delighting in self-inflicted individual tortures and revelling in unthinkable contradictions. This conception of it is probably false and due more to deficiencies of language and unreceptive habit of metaphysical thought than to perversity of ideas. A system of highest ethics, and a religion without a personal God, Buddhism defies the soul of man and exalts the individual through countless experiences of physical embodiment into a position of apparently infinite wisdom—a condition beyond phenomenal existence and of course indescribable. It neither annihilates life in nirvana nor admits immortal existence as we understand existence—*i. e.*, in a perpetually objective form of some sort. It is better in some respects, though older, than Christism. Buddhas and Christs alike, we are taught, are only men sent from celestial congress to direct their fellow men into higher paths leading to incomprehensible perfections, and they are not more “gods” than other men, save in their greater experience.

Theosophy is to Buddhism what Modern Spiritualism is to Christianity—an acceptance of fundamental truths and rejection of priestly ceremonials; an adoption of the spirit and denial of the letter; an application of principles and ideas to real life and claiming not only to have new light but to be ever progressive. It is highly and intensely spiritual, and develops in some most marvellous powers over natural forces. Its spirituality, however, does not leave the earth untouched and mortal needs unrecognized. It is an advance movement in the East, bringing substance and actuality to much that in Buddhism is but vaporious ideality and bewildering prefiguration. It claims that intervening land or water is no barrier to close personal association of its brotherhood, and that they are confined to no land or clime. Here in America it has followers who walk by its light, we are told, without knowing it, and many students trying to encompass the mys-

teries of the occult science, which claims only to be like other science; the fruit of study and discovery, giving mastery over subtle forces of nature which physical scientists fail to recognize. Its ethics are the highest conceivable, and the individual existence of the soul apart from the body a matter of commonest demonstration among the adepts

Mental science so closely resembles theosophy, as we understand it, that we hardly know the difference, save that of immaturity. It is theosophy in its infancy, adapted to the status of American thought in the psychological direction. Confined though it is at present chiefly to the curing of the sick it is by no means admitted that this is the limit or more than the beginning of its adaptation to human needs. It is spreading in this country with amazing rapidity, and though yet a child is certain to bring about a great change in the ideas of many regarding mind, its power over and priority to matter. So far as its students devote their attention to other than such comprehension of its postulates as is necessary to become healers, they are Buddhistic in thought and expression, and some even accept a modified theory of metempsychosis known as reincarnation. Still they reject the philosophy of Spiritualism respecting spirit life, and appear to be all at sea as regards the immediate future of the individual. In their utterances on this they are more Buddhist than Christian, as in other respects. They doubt or deny individual existence of the soul. The Spiritualist believes that his soul will have for all time a body of some sort, spiritual or physical, and his spirit-world and life are filled with very human occupations, thoughts and desires, carried on amid familiar scenery in a very substantial and earth-like manner. He believes in progress eternal, and the possibility of final merging of his individual self into the All-Self is so remote as to give him no concern. But the mental scientist, as near as we can express his notion, rejects the idea of spiritual embodiment, regards his personality as purely mortal and his soul one with indivisible God, now and forever. Personality is not an attribute of his soul; spirit or astral body he does not understand as ever existing to preserve individuality after physical dissolution — in this differing as much from the theosophist as from the Spiritualist.

When these modernized Buddhists, Spiritualists and Christians, and liberal thinkers, generally, unite — as they easily may, for they have now no irreconcilable disagreement — they will form a powerful body of thinking and progressive religionists. And their religion will be a better Buddhism than Buddha taught, a broader Christianity than Christ revealed, a deeper Spiritual philosophy than Swedenborg or Davis heralded. Of course we welcome the opening day and its new light and promise, for the old theologies are wearisome emptiness and humbug, and the new isms cold and repellant or insufficient in their testimony. We do not expect that a new church will arise and a new sectarianism follow. But a new conception of life, its origin, purpose and destiny may come to lift the people of America out of the old religious rut. And in consequence the old

depressing question, "Is life worth living?" answered once by Buddha's No, may be answered anew by Humanity's Yes.

The observations of this writer refer more to certain progressive and restless classes in this Northeastern region than to the United States generally. The churches are not diminishing in the number of their members, but steadily gaining in numbers and also in liberality. The new religion and philosophy of the future will be luminous, scientific and philanthropic—not a conglomeration of vague speculations. True, reverential religion is not a dreamy or speculative impulse, but an earnest love of mankind and of duty, which does not waste itself in unprofitable speculations, but eagerly pursues the positive knowledge of this life and the next, which gives practical wisdom and diffuses happiness. All systems of religion talk about love and recommend it, but their followers seldom realize it in their lives. The religion of the future will *realize* it. Apropos to this subject, Col. Van Horn, of the *Kansas City Journal*, says:

"And as another result of missionary work, there are now in the United States, in England and on the continent, missionaries of Buddhism sent by the schools of the East, to convert us to the philosophy of Gautama. This may sound startling to the general reader, but it is not only a fact, but they have made converts and are making them with a rapidity that is remarkable, making more from us than we are from them. And they are from the very best and brightest intellects among us—not the illiterate, but the most cultured of the educated classes. It will not do to suppress this fact in the discussion—for this is an age when facts must be looked in the face."

Just Criticism.

The intellectual editor of the *Kansas City Journal* has made some very philosophic remarks on the materialistic philosophy of fashionable Scientists, which with some abridgment are here presented:

"As an illustration of its methods of dealing with so subtle a thing as human intelligence, we have a recent singular example in Paris, by the eminent physician Charcot, and others, which illustrates how great men in special departments walk blindfold over things that afford no mystery to common minds. We allude to certain experiments in hypnotism—the professional name for mesmerism. The medical profession for more than half a century sneered at the discoveries of Mesmer, until now compelled to recognize them, they have not the manliness to acknowledge the fact, but invent a new and inaccurate nomenclature to conceal their change of front. To make a long story short these gentlemen have put a subject under the influence one day, enjoined him to commit a theft or a murder at a given hour the next day, and despite every effort of will on the part of the subject, the crimes have been attempted, and the victim only saved from himself by the interposition of the operator, who was present to remove the influence—or through the understanding of the party against whom the offence was to be committed, in the form of the robbery actually carried out.

"But what does science do with this fact? Nothing but announce it, and then proceed to dig among molecules and their related agitations for the solution of the mystery."

[This is what certain scientists do, but their follies are not chargeable to *Science*, nor to the whole body of Scientists. The ablest thinkers to-day, the deepest inquirers, look to the powers of the soul, and the new anthropology traces these powers to their localities in the brain.—ED. OF JOURNAL.]

"How old is this fact? As old as the race. At one time it was called necromancy, at another witchcraft, at another the inspiration of God, at a subsequent time animal magnetism, at another called after one of its more modern discoverers,—mesmerism—now hypnotism—which is only another name for magnetic sleep—if anybody knows what that is—or for somnambulism. Common sense tells common people that it is only an abnormal manifestation of the power that gives one person control over another, or enables one person to influence another. The simple every-day habit of exacting a promise from your neighbor to do a certain thing, or for you to make a like promise, and execute it. Sickness is a partial compliance with the conditions of mortality—death being the complete process. So the hypnotic experiences are the completed illustrations of the common power which we call personal influence. That is all. But that is not mysterious enough for learned people—it is not scientific enough—as everybody can understand it.

"Then, too, it suggests another thing that is fatal to it in the estimation of the teacher—it suggests that what we call the human mind or soul is a potential thing, that acts through the every-day machinery of our bodies, and may be more or less within the grasp of the common mind. There is a higher plane of knowledge than that of mere physical science, and if the theologian mistook its teaching, it is no reason why the pursuit of that knowledge on this higher plane should be ignored. Hence it is that this discovery by Charcot and others, to which we allude, has as yet been barren of fruit, because the methods of science to which the discoverers are wedded forbid the admission of the psychic problem that underlies the remarkable phenomena.

"And just here, it may as well be said first as last,—that the profession to which these eminent men belong, nor any one school of applied science, will ever read the lesson of these experiments, nor will any of the so-called regular schools of learning. The riddle will be read by some thinker outside, and when the bread-and-butter purveyors of theology, science and the schools have become indoctrinated, and prefer to pay their money for the new instead of the old—then these self-constituted teachers of humanity will all know that the cow was to eat the grindstone—and teach the fact. We simply state a fact, known to history, that the progress of the world is due to the inventor and discoverer, and not to the schools. Every single thing, from the advent of modern astronomy to the electric light, has been from the ranks of the people by discovery or invention, and had to fight its way against the teaching class, from time immemorial.

The circulation of the blood, which every pig-sticker knew since knives were invented, had to be forced upon medical science by a quack. And now, although the phenomena we refer to have been before the teaching class since history records anything, and although Mesmer taught it experimentally eighty years ago, science has now only got so far as to admit the existence of the phenomena.

“Why have not the professions given these things more attention, and why have they in these modern days for three quarters of a century practically denied their existence? That question is a legitimate one. And at the risk of being charged with unfriendliness, it must be said that it was either from an inability to think or from a narrow creedism that will not accept a truth from outside discovery. The effect of this, and what constitutes a crime in the teaching class, is, that it has for all these long years shut out this now accepted knowledge from the masses of humanity who look to this teaching class as authority,—and to use a business form of speech,—pay them for finding and teaching the truth. And so the learning of the world and the common mass of mind has, after nearly a century, to begin where the ostracised Mesmer left off—a long, dark, weary denial of the truth by the simple refusal to investigate. This is a serious arraignment, but it is admitted to-day by the scientific world to be but the simple truth.

“And what do we find now? Why, these same men who, for more than eighty years, have been denying this truth, now whistle down the wind as fanatics, dreamers and cranks, those who all the time have recognized the truth, and been seeking the law underlying its remarkable phenomena.”

[This strictly just arraignment applies to the entire body of the old-fashioned and so-called regular medical and clerical professions, all of whom have been educated into ignorance on these subjects by the colleges, which are the chief criminals in this warfare against science and progress. It was impossible to teach the true science of man in any college but the one of which I was one of the founders and the presiding officer; to obtain the necessary freedom in teaching the highest forms of science, I have been compelled to establish the College of Therapeutics in Boston.—ED. OF JOURNAL.]

And this class holds simply that the human being is a living soul, that, for the time being, acts through the organism we call the human body, and that these living beings have an affinity of conditions by which they act and react one upon another, the manifestation of which we call society or social life. That is all there is to this seeming mystery when reduced to simple terms. It is a question that chemistry cannot deal with because analysis is not the method. Molecules, to use a homely phrase, are a good thing, but molecules don't think, and this thing we are considering does think. Molecules are amenable to chemical affinities, and their condition one instant is not and cannot be their condition the next instant. So, if to-day at twelve o'clock the molecules are in combination, chemically, to suggest a theft, they may undergo, and we see do undergo, billions of changes before the hour of meridian arrives to-morrow—and not at

all likely at that exact moment to be in the stealing combination again. Or, if so, it is not likely to be for stealing exactly the same article it was combined on the day previous. Yet this infinite series of impossibilities must be possible to have the experiments we refer to come true — on the theory of molecular action. This is one of those absurdities that men call the marvellous discoveries of science. *No crank in Christendom ever conceived anything so utterly absurd.*

Common sense comes to our help here, and tells us that this power is from an intelligence that controls molecules, and that this molecular activity is but the motor force which this intelligence uses to execute its purpose; that this purpose is, or may be, continuous, because this intelligence is continuous. And as it is thus paramount, and controlling as to this motor force, which to us is the phenomena of what we call life, it must be thus paramount, be persistent — or in other words, immortal. And it must be immortal because it has been the agent of conception and growth — or antecedent. And if it had the antecedent potency, its potentiality cannot cease when it becomes consequent — or when the machinery which is propelled by this motor force is worn out, or broken, and its use destroyed.

Progress of Discovery and Improvement.

WONDERFUL INVENTIONS.—Prof. Elisha Gray's new discovery is called *autotelegraphy*, and it is claimed that it will be possible with its use to write upon a sheet of paper and have an autographic facsimile of the writing reproduced by telegraph 300 miles away, and probably a much greater distance.—*Phil. Press.*

A Washington special in the New York *News* says: The company owning the *type-setting machine* has arranged to put up fifty of these machines for the transaction of business. They will be put up at once in New York, Philadelphia, Baltimore, Washington, Cincinnati, Chicago and other leading cities. The company claims that the machine is now perfect, and that each machine will perform as much work in setting type as ten average compositors.

EDISON'S PHONOGRAPH.—New York, October 21. Edison gives additional particulars concerning his perfected phonograph. He finished his first phonograph about ten years ago. "That," he says, "was more or less a toy. The germ of something wonderful was perfectly distinct, but I tried the impossible with it, and when the electric light business assumed commercial importance, I threw everything overboard for that. Nevertheless, the phonograph has been more or less constantly in mind ever since. When resting from prolonged work upon light, my brain was found to revert almost automatically to the old idea. Since the light has been finished, I have taken up the phonograph, and after eight months of steady work have made it a commercial invention. My phonograph I expect to see in every business office. The first 500 will, I hope, be ready for distribution about the end of January. Their operation is simplicity itself, and cannot fail. The merchant or clerk who wishes

to send a letter has only to set the machine in motion, and to talk in his natural voice, and at the usual rate of speed, into a receiver. When he has finished the sheet, or 'Phonogram,' as I call it, it is ready for putting into a little box made on purpose for mails. We are making sheets in three sizes — one for letters of from 800 to 1,000 words, another size for 2,000 words, and another size for 4,000 words.

"I expect that an agreement may be made with the post-office authorities enabling phonogram boxes to be sent at the same rate as a letter. The receiver of the phonogram will put it into his apparatus and the message will be given out more clearly and distinctly than the best telephone message ever sent. The tones of the voice in the two phonographs which I have finished are so perfectly rendered that one can distinguish between twenty different persons, each one of whom has said a few words. One tremendous advantage is that the letter may be repeated a thousand times. The phonogram does not wear out by use. Moreover, it may be filed away for a hundred years and be ready for the instant it is needed. If a man dictates his will to a phonograph, there will be no disputing the authenticity of the document with those who knew the tones of his voice in life. The cost of making the phonograph will be scarcely more than the cost of ordinary letter paper. The machine will read out a letter or message at the same speed with which it was dictated."

Edison also has experimented with a device to enable printers to set type directly from the dictation of the phonograph. He claims great precision in repeating orchestral performances, so that the characteristic tones of all the instruments may be distinguished.

Type-setting Eclipsed.—A new machine has been invented at Minneapolis which supersedes type-setting. By this machine, which is no larger than a small type-writer and operates on the same plan, a plate or matrix is produced, which is easily stereotyped, thus attaining the same result which is ordinarily reached by preparing a form of type for the foundry which has to be stereotyped and then distributed. The speed of the new machine will be from five to ten times as great as that of type-setting, and if successful it will enable an author to send his work to the stereotyper more easily than he can write it with the pen. When all ambitious would-be authors are let loose upon the world in this manner, what a flood of superfluous literature we shall have and what will become of the superfluous printers?

Printing in Colors has taken a potent move forward. By the new process a thousand shades can be printed at once. Instead of using engraved rollers or stones, as in the case of colored advertisements, the designs or pictures are 'built up' in a case of solid colors specially prepared, somewhat after the style of mosaic work. A portion is then cut or sliced off, about an inch in thickness, and this is wrapped round a cylinder, and the composition has only to be kept moist, and any number of impressions can be printed. This will cause an extraordinary revolution in art work, also in manufactures."

Mr. Edwin F. Field, of Lewiston, Me., has invented a substantial *steam wagon* for common roads. There is no reason why such wagons should not come into use. When first proposed in England they were put down by jealousy and opposition, but I have always contended that the steam engine should have superseded the horse fifty years ago.

FRUIT PRESERVING. — About Christmas time in 1885 people in San Francisco were astonished to see fresh peaches, pears, and grapes, with all their natural bloom, and looking plump and juicy, on exhibition in the windows of confectionery stores on Kearny and Sutter streets. These fruits attracted great attention, and remained on exhibition several weeks, showing the preservative agent employed, whatever it might be, was singularly powerful in resisting the natural decay. When tasted or smelled of, the fruit showed no peculiarity that could lead to a discovery of the secret of the mysterious process.

It appears now that the invention is at last to be made a practical success on a large scale. The Allegretti Green Fruit Treatment and Storage System Company, with the main storehouse at West Berkeley, announce that they are now ready to store and treat all kinds of green articles, by the week or month, and for shipment East. I. Allegretti, the inventor of this system, stated that he had been experimenting with various processes for preserving green fruit for twenty-six years, and had succeeded in discovering this system, whose success has been demonstrated to the fruit-growers of this State.

The building in use at present is a frame structure, capable of storing some fifty tons of fruit. The inner lining of the walls is galvanized iron. There is no machinery used, and the only thing visible is a large tank, supposed to contain the chemical preparation. The arrangements are so made as to give an even temperature of 35 degrees. — *Oakland Enquirer*.

NAPOLEON'S MANUSCRIPT. — "A manuscript by Napoleon I. has been sold in Paris for five thousand five hundred francs. It was written by Napoleon at Ajaccio in 1790, and the language and orthography are said to be those of an uneducated person. In this manuscript he speaks with enthusiasm of Robespierre."

PEACE. — Long and impatiently have I waited for the dawning of true civilization and practical religion. It is coming now in the form of an international movement in favor of peace by arbitration. The British deputation which has visited this country to urge the necessity of a treaty for arbitration, was entertained, Nov. 10th, just before their return, by the Commercial Club at the Vendome Hotel, in Boston, and many appropriate remarks were made by the distinguished gentlemen present, including Gov. Ames, and Mayor O'Brien. The deputation consisted of W. R. Cremer, M. P., the most persistent advocate of arbitration, Sir George Campbell, M. P., Andrew Provard, M. P., Halley Stewart, M. P., Benj. Pickard and John Wilson, who represent the workingmen of Great Britain. William

Whitman of the Club, who presided at the entertainment, remarked, "It is an inspiring fact, as well as indisputable evidence of social growth, that this appeal for arbitration as a permanent policy has come, not so much from kings, from rulers, or from statesmen, as from workingmen. . . . It would create an epoch in human history second only in influence to the birth of Christ, and be such a practical exemplification of religion as would awake the conscience and touch the heart of all peoples."

CAPITAL PUNISHMENT is a relic of barbarism which society has not yet outgrown. It tends to cultivate vindictive sentiments, and, at the same time, to generate a morbid sympathy for criminals. The execution of the Chicago Anarchists, as they are called, has had these effects. They were not properly Anarchists in any philosophic sense, but rather revolutionists, bent on destroying government and the republican rule of the majority by dynamite and assassination. Their death gives satisfaction to the vast majority of the people, but their incendiary language has done incalculable mischief, and greatly interfered with all rational and practicable measures of reform, as carried on by the Knights of Labor, co-operative banks and building societies, co-operative associations and schools of industrial education for both sexes. Just as we have a prospect of getting rid of international war, this revolutionary communism proposes to introduce a social war that has no definite purpose, but the indulgence of the angry passions which have been generated abroad by tyranny and poverty.

ANTARCTIC EXPLORATION.—The Australian colony of Victoria has appropriated \$50,000 for two ships to make a voyage of scientific exploration in the Antarctic circle.

"THE DESERT SHALL BLOSSOM AS THE ROSE."—"The 'Great American Desert' was long ago found out to be a myth; and now some of the remotest corners which were once supposed to be included in it are proving to offer the largest promises of value for agricultural and grazing purposes. In New Mexico, for example, it has long been thought that certain immense areas must always be comparatively useless because of their natural aridity. But engineers have just completed plans for tapping the Rio Grande with a canal and thus bringing under irrigation a tract some ten miles wide and a hundred and fifty long, containing nearly a million acres. The addition of so vast an area to the arable land of the Territory means, of course, a large increase in the productive resources of that section. Other canals may possibly do as much. The work of sinking artesian wells is also going on there extensively, while the project of constructing great storage reservoirs, in which the rainfall of the wet season may be collected and from thence gradually distributed through the dry season, is already in serious contemplation by private enterprise. Modern scientific irrigation has already accomplished wonders for the agriculture of Utah; it seems likely to do even more for New Mexico."

Life and Death.

122 YEARS.—The great-grandfather of the dramatist Steele Mac-kaye, named John Morrison, was an old Covenantanter and preached in the same parish a hundred years. He lived to be 122. His name, written in the old Bible after he was a centenarian, looks like a copperplate.

154 YEARS.—The Cincinnati *Evening Telegram* recently published a special from San Antonio, Tex., which says: News has just reached here, from a most reliable source, of the recent death in the State of Vera Cruz, Mex., of Jesus Valdonado, a farmer and ranchman of considerable possessions. This man's age at the time of death was indisputably 154 years. At Valdonado's funeral the pall-bearers were his three sons, aged respectively 140, 120, and 109 years. They were white-haired, but strong and hearty, and in full possession of all their faculties.

AMERICUS, Ga., Sept. 25.—Edmond Montgomery died on Nick Jordan's place, near the county line of Schley, aged 102 years. He was an African chief of the Askari tribe, and was taken to Virginia from Africa in 1807, when he was a young man. He had a large family in Virginia, and when he died he left his third wife and 25 children in Georgia. His grandchildren and great-grandchildren are unknown and unnumbered. He had remarkably good eyesight and health, and never took a dose of medicine in his life.

THIRTY-THREE CHILDREN.—A West Virginian named Brown recently visited Washington to furnish evidence in a pension claim. Inquiry showed that his mother had borne thirty-three children in all. Twenty of this number were boys, sixteen of whom had served in the Union army. Two were killed. The others survived. The death of the two boys entitles the mother to a pension. General Black says the files of the office fail to show another record where the sixteen sons of one father and mother served as soldiers in the late war.

EFFECT OF POVERTY.—“M. Delorme, a distinguished Parisian physician, found that in France the death rate of persons between the ages of forty and forty-five, when in easy circumstances, was only 8.3 per one thousand per annum, while the poorer classes of similar age died at the rate of 18.7. That was two and one-half times as many of the poor as the rich died in France at these ages out of a given number living.”

JENNY LIND GOLDSCHMIDT, the famous Swedish singer, died at London Nov. 1st at the age of 69. She was born of poor parents and made her first appearance on the stage at nine years of age.

“MRS. RACHEL STILLWAGON, of Flushing, claims to be the oldest woman on Long Island. She has just celebrated her 102d birthday, surrounded by descendants to even the fifth generation. Three-quarters of a century ago the fame of Mrs. Stillwagon's beauty extended as far south as Baltimore.”

Chap. X.—The Law of Location in Organology.

The primal laws applied to the brain—The four directions—The elements of good and evil—The horizontal line of division—Frontal and occipital organs and vertical dividing line—Preponderance of the front in certain heads—Gall, Spurzheim, and Powell—Contrast of frontal and occipital—Latitude, longitude, and antagonism—Location of Health and Disease, of Benevolence, Conscientiousness, Acquisitiveness and Baseness, Energy and Relaxation or Indolence, Patience and Irritability—Duality of the brain and its important consequences—Errors of old system—Self-respect and Humility—Modesty and Ostentation—Combativeness and Harmony—Love and Hate—Adhesiveness and Intellect, median and lateral—Religion and Profligacy—Laws of arrangement and Pathognomy—Physiological influences of basilar and coronal regions—Insanity—beneficial influence of coronal region.

To feeble minds, that excel only in memory, an arbitrary statement of facts to be recollected may be satisfactory, but to those who are capable of fully understanding such a science as Anthropology, arbitrary details, void of principle and reason, are repulsive. A chart of the human brain, without explanation of its philosophic basis and relations, embarrasses even the memory, for the memory of a philosophic mind retains principles rather than details.

After many years of experimental investigation, I have long since fully demonstrated that the human constitution is developed in accordance with the universal plan of animal life, and the human brain is organized functionally in accordance with those higher laws of life, which control all the relations of the spiritual and material worlds,—all interaction between mind and matter. These primal laws are easily comprehended, and their application to the brain removes all the perplexing complexity of organology.

Their application to the brain may be stated as follows: The upper regions of the brain, pointing upwards, relate to that which is above,—to the spiritual realm, to love, religion, duty, hope, firmness, and all that lifts us to a higher life. The lower regions point downwards, and expend their energy upon the body, rousing the heart and all the muscles and viscera, developing the excitements, passions, and appetites.

The maximum upward tendency is at the middle of the superior region, and the maximum downward tendency at the middle of the basilar region, while organs half-way between them are neutral between these opposite tendencies. Hence every faculty or impulse has a location in the brain, higher or lower, as it has a more spiritual or material tendency, and as its influence on the character inclines to virtue or vice. The better the faculty, the higher its location,—the more capable of evil results, the lower it is placed. The higher position given to the nobler faculties accords with their right to rule the inferior nature, the predominance of which is evidently abnormal,

and the effects of which, in this abnormal predominance, are expressed by terms full of evil, although their functions in due subordination are useful and absolutely necessary.

In applying this principle, we realize that such a faculty as Conscientiousness must be near the very summit, and that propensities to theft and murder must belong to the base. That such propensities exist in many, we know, and it is an absurd optimism which would ignore such facts because they are abnormal. The world is full of human abnormality, because it is not yet above the juvenile age of its growth, which is the age of feebleness and folly, disease and crime. The imperfect organism of childhood is incapable of resisting either temptation or disease. The twenty-five millions destroyed by the black death, in the fourteenth century, and the countless millions destroyed by war in all centuries, including the present, show how little we have advanced beyond the spirit of savage life. The ferocity of nations is as much the product of their cerebral organization, as the ferocity of the tiger, and springs from the same region of the brain,—lying on the ridge of the temporal bone,—a region that delights in fierce destruction, and is large in all the carnivora. It would be contrary to the spirit of science to ignore the fact that man has an element of ferocity similar to that of the tiger, because in the fully developed man that fierce element is overruled by the higher powers and confined to the destruction of that which does not suffer. The unwillingness to recognize anything evil comes not from the spirit of science, but from the *a priori* assumptions of sentimental theology, which presumes that it thoroughly comprehends the Deity (who is beyond all human comprehension), and, out of its imaginative ignorance, fabricates *a priori* philosophies and doctrines that everything in man is good, or that everything in man is evil. Anthropology has not thus been evolved from *a priori* speculation, but presents its systematic doctrines as generalizations of the facts and experiments which have been carefully acquired and studied through the last half-century. The facts and experiments are too numerous to be recorded and published now, and had no channel for publication when they occurred.

Everything in the lower half of the brain has a tendency to evil, in proportion to its over-ruling power, and everything in the upper half operates in proportion to its elevation with that controlling influence against evil, which uplifts him toward angelic or divine superiority.

The brain may be divided by a horizontal line from the center of the forehead into its coronal and basilar halves, and by a vertical line from the cavity of the ear, into its frontal and occipital halves.

The vertical line separates the more passive and the more active faculties. The posterior half of the brain is the source of the backward forces by which the body is advanced, as the anterior half is the source of the forward movements by which our progress is checked. The posterior half would make blind, unceasing, irrepressible action—the anterior half would produce a state of relaxed and feeble tranquillity and sensibility—the condition of a helpless vic-

tim. The concurrence of the two is indispensable to human life, and the necessity of their more or less symmetrical balance is so great that nature balances the head upon the condyles of the occipital bone, at the summit of the neck, which are so located as to correspond very nearly with the opening of the ear.

The contour of the head is very nearly that of a semicircle, with its center an inch or more above the cavity of the ear. Thus wisely has nature arranged in well-balanced individuals the symmetrical proportion between the active and passive elements of life. In the head of the writer there is a preponderance of the passive over the active elements, which gives him the attraction to a studious, rather than active or ambitious life.* In nations or races of ambitious character, the head is long, or *Dolico-cephalic*, and the occipital measurement is larger than the frontal, but in those of peaceful, unambitious character, like the ancient Peruvian and the Choctaws of the United States, the occipital measurement is less than the frontal.

From these remarks the reader will understand that force belongs to the occiput and gentleness to the front. The occipital region is associated with the spinal column and the limbs, in which regions the vital forces reside. Hence the occipital action of the brain generates vital force and diffuses it in the body, while the frontal region, in its aggregate tendency, expends the vital force—the greatest tendency to expenditure being in the most extreme frontal region. Both the front lobe and the anterior extremity of the middle lobe tend to the expenditure of vital force and destruction of health, and it is absolutely necessary to life that the action of the front lobe should be suspended one-third of our time by sleep, without which it would exhaust vitality.

We shall therefore find that organs are located farther backward in proportion to the energy and impelling power of the faculty, and farther forward in proportion to their delicacy and intellectuality—the extreme front being the region of maximum intelligence.

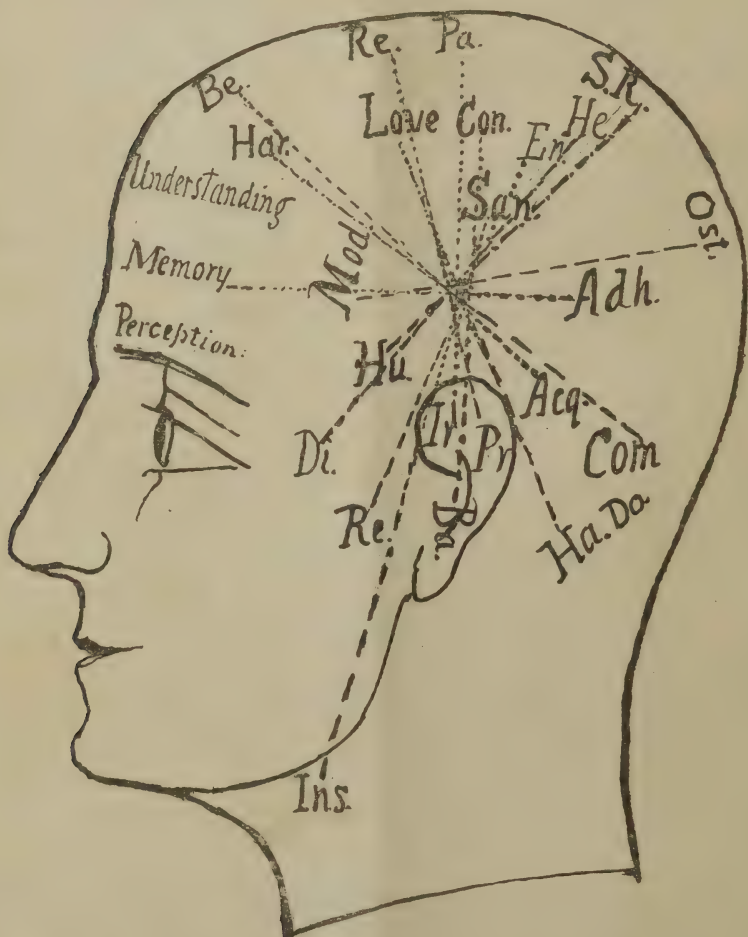
With these two rules, giving the latitude by the ethical quality and the longitude by the active energy, I have been accustomed to require my pupils to determine the location of the various elements of human nature, bearing in mind that organs of analogous functions are located near together, and organs of opposite or antagonistic functions occupy opposite locations in the brain; and thus in proportion as one is above the horizontal line the other is below it, and in proportion as one is forward the other is backward,—in proportion

* The head of Dr. Gall shows the same frontal preponderance, which led him to the pursuits of intellect instead of ambition, but also shows an immense force of character derived from its extreme breadth and basilar depth. The head of Spurzheim, whose skull I have often examined, shows even a greater preponderance of the front, and a predominance of the coronal over the basilar region, producing his marked amiability, with sufficient basilar breadth to give him physical force.

Each had a large brain. In Dr. Wm. Byrd Powell, who had a long head, and who was a man of restless ambition and fiery energy, the occipital predominated over the frontal development decidedly, producing, although the frontal development was not large, much activity and force, or brilliancy of mind, but not the calm temperament most favorable to philosophy. His opinions were more bold and striking than accurate. Dr. P. made a valuable collection of crania, and was almost the only American scientist who gave much attention to the cultivation of phrenology.

as one is interior or near the median line, the other is exterior or toward the lateral surface.

With this introductory explanation, I begin by asking, Where should we locate the faculty which has the maximum degree of healthy influence, and is therefore called Health? They will readily decide that it belongs to the posterior half of the head, but not the most posterior, as it is not of restless or impulsive character. Then as to its latitude they readily decide that it must be considerably above the middle zone and in the upper posterior region where, after comparing locations, they generally agree that its position corresponds to the spot marked by the letters He.



We then inquire where the faculties should be located which give us the least capacity to resist disease, the least buoyant health, and the greatest liability to succumb to injuries. This being opposite to the

last faculty must be located diametrically opposite, in a position anterior and inferior, which would bring it to the anterior end of the middle lobe. As this organ gives so great a sensitive liability to disease, it is not improper to call it the organ of Disease, if we recollect that that is its abnormal action, as murder is the abnormal action of Destructiveness. Its normal action gives a very acute interior sensibility by means of which we understand our physical condition and are warned of every departure from health.

The pupils generally locate this organ very nearly as is shown by the letters Di.

We have now gained an additional rule for guiding the location, viz., that in proportion as a faculty is of healthy tendency it is located nearer to Health, and in proportion as it is of morbid tendency it must be located nearer to Disease.

Let us now take two such faculties as Benevolence or good will and Integrity or Conscientiousness. They will readily decide that Benevolence must be in the superior anterior region, as it is a virtue of the weak or yielding class, and that Conscientiousness, which makes us just and honest, must be among the highest organs, much farther back than Benevolence but not so far back as Health. There is no difficulty in agreeing upon the locations, shown by the letters Be. and Con.

If now we seek for the opposite faculties, which lead to selfish and dishonorable action, the antagonist of Benevolence will be unanimously located below and behind the centre, where it is represented by the letters Ac., as Avarice or Acquisitiveness is the leading manifestation of the selfish faculty.

As the faculty of Conscientiousness gives us the control of our impulses and selfish or sensual inclinations to qualify for the performance of duty, its antagonist gives the vigor to the sensual, violent and selfish passions, and prompts to the utter disregard of duty. The one being vertically above the centre of the brain, the other must be vertically below it; one being on the upper the other must be on the basilar surface. This brings it below the margin of the middle lobe, which is above the cavity of the ear. Hence through the cavity of the ear we reach underneath the basis of the middle lobe, where it rests on the petrous ridge of the temporal bone, and the external marking would correspond to the cavity of the ear or meatus auditorius. For this organ and faculty, the name which would express its unrestrained action is Baseness, as it would lead to the commission of many crimes and the violation of all honesty and justice. For its moderate and restrained activity, the term Selfishness would be sufficient as it induces us to heed our selfish appetites, interests, and passions, in opposition to the voice of duty. Its more normal activity is to invigorate our animal life generally and prevent us from going too far in the line of duty, patience, forbearance and benevolence. Let it be marked Ba. Its position will be recognized on the vertical line between the frontal and occipital, as it is not an element of energy and success, nor of debility, but simply an element of debasing animalism, which is not destitute of force.

There are in the human constitution the opposite elements of untiring energy or industry, and of indolent relaxation. To the former we must give an exalted position, as it is the sustaining power of all the virtues; and it must evidently be farther back than conscientiousness as it is of a more vigorous character. It is favorable to health and therefore near that organ, and being free from selfishness it is not far behind Conscientiousness. The letters En. show its location. Energy being thus behind Conscientiousness, its antagonist Relaxation, the source of indolence, must be anterior to Baseness, where we locate the letters Re.

The opposite elements of Serenity or Patience, and Irritability are easily located; the former is obviously entitled to a high position. From its quiet nature it cannot be assigned to the occiput, and from its steady, unyielding and supporting strength, it cannot be assigned to the frontal region. It must, therefore, be in the middle superior region, where the letters Pa. locate it. Irritability must be on the median line of the basilar range (and antagonizes Patience on the middle line above), but not as low as Baseness, for one may be honorable though irritable and high-tempered, but such temper is not compatible with very strict conscientiousness.

In locating organs we are to remember that the brain is not a single but a double apparatus—a right and a left brain, each complete in all the organs; consequently, we are in this instance locating our organs in the left hemisphere alone, in which the median line where it meets the other hemisphere is on its right side, and the exterior surface is on its left. An organ located at the median line, or inner surface, as Patience, must have its antagonist at the external or lateral surface, as Irritability.

The right hemisphere has the organs of the left side along the median line, and the organs of its right side on the exterior surface. The left hemisphere has the reverse arrangement. Consequently, the right side of each hemisphere and the left side of the other are identical in function. How then does the right side of one compare with the right side of the other, and the left side with the left? Dr. Gall and his followers have overlooked these questions, and fallen into very great errors in consequence. Gall, for this reason, was mistaken in the natural language of the organs, as will be hereafter shown, having spoken of it as if we had a single brain, and also mistaken in many of the organs concerning which a knowledge of the relations of the two hemispheres to each other would have corrected the errors. There is a striking analogy, or coincidence of function between the two right sides and between the two left sides never suspected prior to my investigations and experiments.

Let us next look for the sentiment of Pride, or Self-respect, which has been called Self-esteem. It is a sentiment of conscious ability. Its character is dignity, rather than selfishness. We readily perceive that it must be in the upper region, but considerably behind the vertical line, where we place the letters S.R.

The question may now arise whether it should be nearer to the right or the left side of the hemisphere, its inner or outer surface. The law governing this matter is that organs of external manifestation are at the median line, but those of more interior and spiritual character are generally at the lateral or exterior surface. Self-respect, or Pride, is an organ of strong exterior manifestation, and is, therefore, at the median line between the hemispheres. Its antagonist must, therefore, be sought at the external or lateral surface, as far below the horizontal division, as Self-respect is above it, and as far forward as Self-respect is backward. Hence we find Humility where the letters Hu. are located.

The idea of a specific antagonist to Self-esteem was never entertained in the phrenological school, but it is obviously indispensable, for Humility, which gives an humble or servile character, and disqualifies for any high position, is as positive an element as the opposite, and is very common in the dependent and humble classes of society. This organ diminishes our psychic energy in proportion to its distance in front of the ear and qualifies for submission instead of command.

If we look for the seat of Modesty, we should look in front of the ear, but not so far forward as for Intellect. We would look near the horizontal line, not to the upper surface, and would see the propriety of locating it in the temples at the letters Mo. For its antagonism in Ostentation we should look to the occiput. That species of modesty which produces a bashful and yielding character will be found just below the horizontal line, while that form of modest sentiment which produces the highest refinement rises into connection with love at the upper surface. The organ thus runs obliquely upward, corresponding to the position of the convolutions. The antagonist, Ostentation, extends above and below the letters Ost. on the occiput.

If we seek the organs that impel to contention and combat, we would naturally look to the lower posterior region, but not the lowest. We find Combateness behind the ear, marked Com. Its antagonist, which shuns strife and seeks harmony, must evidently be in the superior anterior region, and near the intellectual organs which it resembles in function by facilitating a mutual understanding, and giving a spirit of concession. The location is marked Har. for Harmony. It embraces a group of organs of harmonious tendency, such as Friendship, Politeness, Imitation, Humor, Pliability and Admiration, as the Combative group is hostile, stubborn, morose and censorious.

For the sentiment of Love we look to the upper surface of the brain as the seat of the nobler sentiments. Being a stronger sentiment than Harmony, it should be located farther back where we place the letters Love. Its antagonism must be on the basilar surface, and a little behind the vertical line, as Love is before it. This antagonistic faculty would domineer and crush. Its extremest action would result in Hatred. Its location is marked by the letters Ha. and Do.

Upon the principles already stated, the intellect occupies the extreme front of the brain — the anterior surface of the front lobe. Its

general character will be represented by its middle — the region of Consciousness and of Memory (Memory). The faculties that relate to physical objects, the intellect common to animals, would necessarily occupy the lower stratum along the brow (Perception), while the higher species of intellect would occupy a higher position at the summit of the forehead. Sagacity, Reason, and other similar forms of intellect, marked Understanding, are above — physical conceptions below — Memory, which retains both, lying between them.

The perceptive power, with the widest exterior range, is at the median line, where we find clairvoyance; and the interior meditative power, such as Invention, Composition, Calculation, and Planning, belongs to the lateral or exterior surface of the forehead, according to the principles just stated. Adhesiveness (Adh.) is the centre of the antagonism to the intellect.

Religion, which relates to the infinite exterior, to the universe and its loftiest power, must evidently be upon the median line and in the higher portion of the brain, farther back than Benevolence, as it is a stronger sentiment, but not so far back as Patience and Firmness.

Its antagonism must be at the lower external surface, behind Irritability, (as Religion is before Patience,) but before Acquisitiveness. The tendency of such a faculty must be toward a lawless defiance of everything sacred, a passionate, impulsive self-will and selfishness, resulting in lawless profligacy. Profligacy would, therefore, be the name for its predominance (Pr.), while executive independence and energy for selfish purposes would be its more normal manifestation.

Thus we might go over the entire brain, showing that all the locations of functions which have been learned from comparison of crania with character, and which have been absolutely demonstrated by experiments upon intelligent persons, are arranged in accordance with general laws which are easily understood. The perfection of divine wisdom is made fully apparent when we see the vast complexity of the psychic phenomena of man.

“A MIGHTY MAZE BUT NOT WITHOUT A PLAN,”

subjected to laws of arrangement and harmony that make it so clearly intelligible. Far more do we realize this when we master the science of PATHOLOGY, and discover that all the attributes or faculties of the human soul, and all its complex relations with the body, are demonstrably subject to mathematical laws.

I do not propose in this sketch to go through all the details of the localities as I might with the anatomical models before a class, but would refer, in conclusion, to the location of the physiological functions of the brain.

Its basilar surfaces, pointing downwards, have their normal influence upon the body. Behind the ear they act upon the spinal cord and muscular system. Hence basilar depth produces vital force and muscular power. But as the basilar functions, which use the body, are opposite to the coronal functions which sustain our higher nature, it follows that excessive use of the body, either for exertion or for sensual pleasure, is destructive to our higher faculties, operating in

many respects like the indulgence of the lower passions. Hence mankind are imbruted by excessive toil as well as by excessive sensuality and violence.

While the basilar region behind the ear operates upon the posterior part of the trunk, that portion in front of the ear operates more anteriorly, affecting the viscera, in which there is no muscular vigor, and the tendency of which is toward indolence. Thus the vertical line separates the indolent from the energetic basilar functions, and all the enfeebling, sensitive, morbid faculties that impair our energies are in the anterior basilar region.

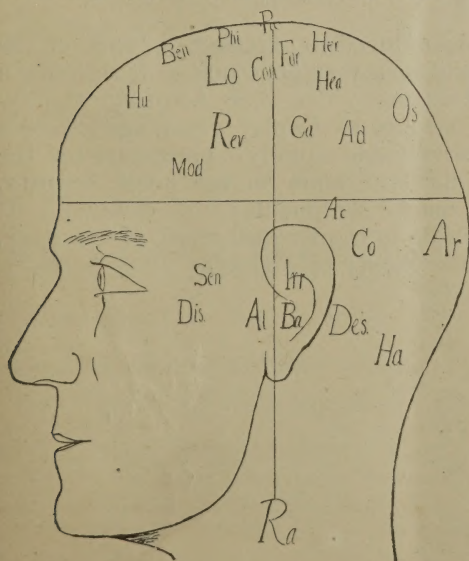
The normal action of these organs, however, is necessary to life, and sustains the visceral system in the reception of food and expulsion of waste. But as it is the region of sensibility to all influences, it renders us liable to all derangements of body and mind, unless we are strongly fortified by our occipital strength. The tendency to bodily disorder has been explained by reference to the organs of Disease and Health. Insanity, or derangement of the mind and nervous system, belongs to a basilar and anterior location, which we reach through the junction of the neck and jaw (marked Ins.). It is more interior, but not lower than Disease, in the brain. Its antagonism is above on the temporal arch, between the lateral and upper surfaces of the brain, marked San. for Sanity. It gives a mental firmness which resists disturbing influences.

The coronal region or upper surface of the brain has the opposite influence to that of the basilar organs in all respects, withdrawing the nervous energy from the body, tranquillizing its excitements, and attracting all vital energy to the brain, especially in its upper region. By sustaining the brain, which is the chief seat of life, and by restraining the passions, the coronal region is more beneficial to health and longevity than any other portion.

In the posterior part it not only has this happy effect, but by sustaining the occipital half of the brain, gives a normal and healthy energy to all the powers of life. Such is the influence of the group of organs in which Health is the centre.

It is obvious, therefore, that the study of the brain reveals laws which give us the strongest inducement to an honorable life as the only road to success and happiness.

To show the facility with which organs may be located upon general principles, I present herewith the locations actually made by a small class of pupils when I



first proposed to have them determine locations according to the general laws of organology. None of these locations would be called erroneous, the most incorrect of all being Adhesiveness, located a little too high. They are Be. Benevolence, Ac. Acquisitiveness, Phi. Philanthropy, Des. Destructiveness, Lo. Love, Ha. Hate, Hu. Humor, Mod. Modesty, Os. Ostentation, Con. Conscientiousness, Ba. Baseness, Pa. Patience, Irr. Irritability, For. Fortitude, Al. Alimentiveness, Her. Heroism, Sen. Sensibility, Hea. Health, Dis. Disease, Ad. Adhesiveness, Co. Combaticiveness, Ar. Arrogance, Rev. Reverence, Ca. Cautiousness, Ra. Rashness.

The suggestion cannot be too often repeated that the nomenclature of cerebral organology can never adequately express the functions of the organs. The brain has in all its organs physiological and psychic powers, which no one word can ever express fully. Sometimes a good psychic term, such as Firmness, suggests to the intelligent mind a corresponding influence on the physiological constitution, but in the present state of mental science the conception of such a correspondence is very vague.

Moreover, even the psychic functions are not adequately represented by the words already coined in the English language for other purposes, and I do not think it expedient at present to coin new terms which would embarrass the student. The word *Sanity*, for example, answers its purpose by signifying a mental condition so firm and substantial as to defy the depressing and disturbing influences that derange the mind. It produces not the mere negative state, or absence of insanity, but a positive firmness, and self-control, which is the interior expression of firmness. The cheerful, stable, manly, and well-regulated character which it produces, disciplines alike the intellect and the emotions, and shows itself in children by an early maturity of character and deportment, and freedom from childish folly and passion.

If a new word should be introduced to express this function, the Greek word *SOPHROSYNE* would be a very good one, as it signifies a self-controlled and reasonable nature. The verb *ANDRISO*, signifying to render hardy, manly, strong, to display vigor, and make a manly effort of self-control, would be equally appropriate in the adjective form, *ANDRIKOS*, and still more in the noun *ANDRIA*, which signifies manhood or manly sentiments and conduct. It would not, however, be preferable to the English word, *MANLINESS*, which is as appropriate a term as *Sanity* or *ANDRIA*.

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